tables (see, e.g. Tables 1 and 2, below) and, looping **504** through each input and, for each input, executing a "On Connect" method of FIG. **8**.

[0058] Referring to FIG. **6**, the controller **200** may execute the illustrated method **600** upon startup, e.g. powering on, of the controller **200**. The method **600** may include clearing **600** values associated with input devices in the port list or device, the port list and device table (see Tables 1 and 2) storing values describing the state of inputs to the controller, e.g. devices coupled to input lines **204a-204c**. The input lines **204a-204c** may then be evaluated in order to prioritize **604** the input lines according to attributes of the devices coupled thereto. The manner in which the input lines **204a-204c** are prioritized is described in detail below with respect to FIG. **17**.

[0059] Referring to FIG. **7**, the controller **200** may execute the illustrated method **700** upon startup, e.g. powering on, of the controller **200**. The method **700** may include clearing **702** values associated with output devices in the port list and the device table, the port list and device table (see Tables 1 and 2) storing values describing the state of output to the controller, e.g. devices coupled to output lines **208a-208c**. The output lines **208a-208c** may then be evaluated in order to loop **704** through each output line **208a-208c** having a device coupled thereto and, for each connected output line **208a-208c**, selecting **706** an input line **204a-204c** to coupled thereto. The manner in which the input lines **204a-204c** are selected **706** for each output line **208a-208c** is described in detail below with respect to FIG. **14**. The outputs may have priorities assigned thereto and the looping **704** through the outputs may be performed in order of priority. The priority of an output may be manually set, manually set based on a device type coupled to the output, or based on some other criteria. The type of a device coupled to an output may be determined by querying the device for a device or device type identifier or by detecting power usage of the device corresponding to a device of a particular type (e.g. amount of power used).

[0060] Referring to FIG. **8**, the controller **200** may execute the illustrated method **800** upon detecting connection of a device to a port (e.g. one of the input lines **204a-204c** or output lines **208a-208c**). The method **800** may include determining **802** whether the port is configured, i.e. whether a record is stored by the controller **200** that describes a device coupled to the port. For example, the controller **200** may manage or access memory storing data listed below in Table 1 for each port.

previously detected as being connected to the port. The "Device ID" may identify each device or may uniquely identify a class of device. The "Bus" field indicates which of the bus lines **214a-214c** to which the port is currently coupled. The "Current Voltage" and "Current Current" fields indicated a most recent measurement of the voltage and current on the port. The "Flap Count" field indicates how many times power from a source connected to an input port has lost power. The "Current Temperature" lists a current temperature measurement of a device coupled to the port. The "Used Power" field indicates how much power has been consumed by a load coupled to an input port or provided by a source coupled to an output port in Coulombs or Amp-hours.

[0062] Where the data field for a given port (e.g. an ID in Table 1) indicates that a device is connected (see third column) then the port may be deemed to be configured at step **802**. If the port is not deemed to be configured, then the device connected to the port may be discovered **804**, such as by executing the method **900** of FIG. **9**.

[0063] If the port is deemed to be configured, then step **806** may include evaluating whether the port is n input (e.g. whether the "direction" field indicate an input port in Table 1). If it is found **806** to be an input, then the input may be validated **808**, which may include executing the method **1000** of FIG. **10**.

[0064] If the port is not found **806** to be an input, the method **800** may include evaluating **810** whether the port is an output (e.g. whether the "direction" field indicate an output port in Table 1). If it is found **810** to be an output, then the output may be added **812** to a list of output devices. If the port is not found **806**, **810** to be either an input or an output, then the port may be disabled **814** and the method **800** may end.

[0065] Referring to FIG. **9**, the controller **200** may execute the illustrated method **900** as part of the step **804** of discovering a connected device. The method may include evaluating **902** whether the connected device has a communication line, i.e. is capable of performing serialized communication over one or more lines coupling the connected device to the controller **200**, which may include communication over an input line **204a-204c** or output line **208a-208c**. If not, then a voltage on a line (input **204a-204c** or output **208a-208c**) coupled to the connected device is read **904**. If it is not found **906** to be positive, then the method **900** may end. If it is found **906** to be positive, then the connected

TABLE 1

					Port List				
ID	Direction	Connected	Device ID	Bus	Current Voltage	Current Current	Flap Count	Current Temp.	Used Power
1	In	1	101	1	5	450	0	80	500
2	In	1	58	2	4.7	0	1	80	25
3	Out	1	78	1	5	450	0	80	525
4		0							

[0061] The fields of a port list as shown in Table 1 may include an identifier field (ID) that uniquely identifies each port, e.g. each input line **204a-204c** and output line **208a-208c** of the control device **102**. The "Direction" field may indicate whether the port is an input or output port. The "Device ID" may record a unique identifier of the device

device may be deemed to be an input device and the input device may be validated **908**, such as by performing the method **1000** of FIG. **10**.

[0066] If the connected device is found **902** to have a communication line, then the controller **200** may query **910**